





# **Electronic Classroom Of Tomorrow**

**Technology Plan** 

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## I. MISSION STATEMENT

#### A. Board Resolution:

The mission of the Electronic Classroom of Tomorrow is to become the nation's premier, performance driven tele-community school by achieving superior and measurable results through a quality and innovative approach to educating children. ECOT will make distance learning accessible to all of Ohio's students regardless of mental, emotional, or physical disability, regardless of socioeconomic or geographical hardship, and regardless of academic ability or family background. (*Employee Handbook* with mission statement included p. 7, Board approved January 24, 2001)

#### **B.** Introduction

ECOT offers a revolutionary educational option, online learning, for all students in Ohio ages 6-21. Students are unique learners with the right to choose the educational setting that provides them the greatest opportunity for reaching their educational goals. ECOT students reside in all areas of Ohio including urban and rural areas. They are culturally and economically diverse. ECOT serves students at all levels of academic ability including exceptional, special needs, students with disabilities, and gifted students. ECOT's unique program also works well for students who are chronically or terminally ill, national competitors, and students who may otherwise feel out of place, threatened or harassed in the traditional classroom setting. ECOT addresses the socialization needs of its students through organized field trips, publications, parent support groups, clubs, and other activities away from the computer. Special consideration is made to connect the extra-curricular activities to the classroom curriculum. ECOT innovatively serves students whose learning needs are inadequately met outside of a traditional classroom.

## C. General Description and Current Technology Status of ECOT

ECOT is a state wide computer-assisted learning community school. Students are provided with Internet connectivity via an ECOT provided plain old telephone service (POTS) line. This basic line is used to access a contracted local Internet Service Provider that receives instructions though login protocol to establish a dedicated connection with ECOT's server network via a specially configured ECOT provided computer. This system setup, starting with the standardized ECOT student computer unit which utilizes Microsoft Windows 2000 operating system due to its enhances security features, connects to ECOT's servers via an ECOT provided POTS line and ISP is known as an Intranet. Should a student be temporarily unable to connect to the ECOT network, they still are able to continue work using their desktop computer loaded with Microsoft Office 2000. This Intranet control prevents students from gaining free access to the World Wide

Web thereby preventing possible exposure to inappropriate material. Student activity is limited to ECOT's intranet content. The only Internet sites available to students are ECOT reviewed and approved websites permitted passage through our Proxy Server. ECOT's Proxy Server is used to pre-screen and cache all Internet web access. ECOT's system security includes a firewall and passwords that prevent anyone from entering ECOT's Intranet without an ECOT configured computer and password. The firewall controls, filters, and monitors all incoming activity.

To further protect its students, ECOT's system has been designed to prevent the sending or receiving of email outside ECOT's intranet. This means that students may only send and receive email to and from other students and ECOT faculty and staff. All student emails are electronically screened for inappropriate words.

ECOT's servers are housed at a secured location that specializes in server colocation. The co-locator provides physical security; there is an approved access list of ECOT authorized personnel. The co-locator provides an uninterruptible power source, locked cabinets, climate control, automatic fire protection and direct access to the Internet. Redundant power and network access are also included.

ECOT provides Help Desk services via a toll free phone number for students with technical difficulties with their system. The Help Desk personnel diagnose and solve the problem. Should a hardware problem be detected, a replacement unit is shipped from ECOT's parts depot that inventories extra student computer components for these type situations and the defective unit is returned to the Help Desk's certified break-fix department for repair.

To prevent technical problems, ECOT has "locked down" the computer units provided to students. Student units have been configured without CD-ROM and disk drives to prevent the installation of unlicensed or unauthorized programs that could contain viruses or corrupt the system. System policies prevent any sizable files from being attached to emails to further heighten security. Students have access to store their work on remote memory space located on a dedicated server within the network that is backed up daily. In the unlikely event of a system failure, this data can be restored from the backup.

Asset Management is an important component of maintaining the integrity of ECOT's system. ECOT uses asset management software that periodically scans student units when they logon to search for missing components, altered configurations, or unauthorized software. This asset management software also detects any unauthorized peripheral equipment that may be connected to the student unit.

ECOT recognizes that technology is advancing at a rapid rate. To avoid the use of technologically obsolete equipment, all ECOT computer equipment has been leased for a period of time that is not expected to exceed its useful life.

System design alone is not sufficient to protect ECOT students and computer equipment. The attached policies have been adopted by ECOT and are signed for by parents and students as part of the enrollment process. A sample of ECOT's Computer Use Policies are shown in Appendix A.

ECOT provides learning packets of workbooks and hard copies of web-based curriculum for the students until the ECOT computer, phone line, and Internet Service Provider (ISP) are properly set up. When the student is online with ECOT, the school provides electronic-based curriculum, tutorial assistance from the teachers primarily through email and classroom discussions via chat rooms. Teachers additional provide educational assistance by phone. ECOT students continue to learn on and off line in order to maintain a well-rounded educational and developmental experience.

ECOT has developed and implemented a proprietary software program called the Student Electronic Profile (SEP). The objective of the SEP is to maintain student profiles and track student progress. The SEP also acts as the central ECOT application in that all system actors use it to access functionality to perform their duties. The actors utilizing the SEP are students, parents, teachers, supervisors, clerk and administrators. The SEP provides easy access to class learn centers, online curriculum, and message boards. The SEP also provides rapid access to send messages to teachers.

The daily goal of ECOT is to provide education for its students by utilizing the highest technological means and to educate fully in both traditional subjects and in technology, in accordance with the level of the student.

## D. Technology Advisory Committee

- 1. Members:
  - a. Parent: Teresa Berry and Cindy Baird,
  - b. Teacher: Martha Bycynski,
  - c. Student: Cory Berry, Matthew Baird
  - d. Employees: Technology Director, Jerry Margeson and Chief of Operations, Scott Kern
  - e. Community Leader: Ed Hogan

## 2. Committee Reporting

- a. Committee shall meet once every quarter, first reporting to be at the meeting to be held at the end of the first school year. Committee shall review progress against the Technology Plan at each meeting and shall update the Technology Plan annually the second calendar quarter of each year. This updated plan is presented to the ECOT Board of Directors for approval to be used in all filings and included in ECOT's annual report that is distributed to Parents, Students, and the community.
- b. Chief of Operations shall report ECOT's progress of technology plan goals to committee.
- c. Input of Committee to be reported to Directors of Departments of ECOT for incorporation into educational/technological plans

#### II. GOALS

## A. EDUCATIONAL

- 1. ECOT will assist students in acquiring the skills necessary for success in an increasingly technological world. On-line learning will help students master course content, as well as develop communication, collaboration, and creative problem solving skills.
- 2. Technological fluency will increase as students become adept at using computers and the Internet as a part of their learning. ECOT teachers teach to the National Technology Literacy Standards and Goals.
- 3. ECOT students will be expected to master all required State of Ohio learning objectives before progressing to the next educational level. These learning objectives represent the essential knowledge and skills necessary to success at the next educational level.
- 4. ECOT will seek out and review new and supplemental curriculum for our technology-based students. This includes the individualized requirements of special needs students. The goal being to review and include new curriculum and supplements as they become available. Review is an ongoing and incorporation depends on cost and time necessary for synthesis into the program.
- 5. The SEP currently tracks student activity based on voluntary input from the student. This needs to be improved to automate the tracking process without relying on voluntary input from students.

ANNUAL EDUCATIONAL GOALS	YEAR 1 BENCHMARKS & INDICATORS	YEAR 2 BENCHMARKS AND INDICATORS	YEAR 3 BENCHMARKS AND INDICATORS	BUDGET/ ALLOCATION
I and 2. Students will increase technical skills to a point of Technological Fluency, i.e. students will be able to use all computer skills necessary to operate computer software and communicate via computer. ECOT shall follow the National Technology Literacy Standards/Goals.	Students contact their teachers by computer (email) and access educational materials by computer with in 1-3 months. Indicators are semester testing and rubric objectives prepared each semester.	Students learn to utilize scanners, faxes, and perform computerized information research within the intranet within 2-6 months. Higher levels are made available, as the student progresses. Indicators are students complete assignments and return assignments in by fax, e-mail, and scanned materials.	Students learn business-oriented tasks and guidelines for computer use; such as formats, 3-6 months language and style for elementary and business classes for high school, 6-12 months. Indicator is passing of semester classes.	ECOT budget from State funds, entitlement funds and grants.
3. Mastery of required learning objectives as prescribed by the State of Ohio.	Passing of courses within 6-12 months. Indicators are semester and final grades.	Rubric system implemented for learning objectives for all levels of students. Students' progress goal is to pass a rubric every 22 days. Yearly review of program and students. Indicators are rubric completion with trimester and yearend passing grades.	Rubric system refined for new business / computer courses. 6- 12 months. Indicators are grades and entrance exams and exit exams.	ECOT budget from State funds, entitlement funds and grants.
4. Seek out new and supplemental web-based curriculum for students as this industry grows.	Ongoing review at Committee meetings. Implement as technology and budget allow. Determine how software and hardware can assist special needs students.	Implement software and hardware to support special needs students. Ongoing review at Committee meetings. Implement as technology and budget allow.	Implement software and hardware to support special needs students. Ongoing review at Committee meetings. Implement as technology and budget allow.	ECOT budget from State funds, entitlement funds and grants.
5. Develop and improve electronic process by which student activity can be logged.	SEP program is in place to obtain records on student activity on a voluntary basis. Work with ODE to establish what additional records would satisfy their requirements.	Improve SEP program to electronically gather all ODE required data. Should be in place by June 30.	Further improve SEP program to gather additional student activity records in a manner that is useful for teachers. Ongoing review at Committee meetings. Implement as budget allows.	ECOT budget from State funds, entitlement funds and grants.

## **B. INSTRUCTIONAL**

- 1. The instructional objectives provide a base for instruction. However, the learner is the center of the curriculum and must be actively involved in all stages of the learning process, including the following:
- Selecting and planning appropriate activities.
- Determining and adjusting suitable strategies.
- Monitoring progress.
- Assessing goal attainment, including process, strategies, and products.
- Revising goals and establishing new ones.
- 2. In addition students receive a review of their most recent work in these subjects. Moreover, as they log off for the day, each student will be asked to evaluate their projected SSDL against their actual daily schedule.
- 3. Establish a methodology to measure technology impact on student learning and assess evolving instructional technology capacities and needs across the school in our ongoing intranet based curriculum. Our assessments and our main teaching methods are through technology. Please see ECOT public website at www.ecotohio.org.

ANNUAL	YEAR 1	YEAR 2	YEAR 3	BUDGET/
INSTRUCTIONAL	BENCHMARKS	BENCHMARKS	BENCHMARKS	ALLOCATION
GOALS	AND	AND	AND	ALLOCATION
GOALS	INDICATORS	INDICATORS	INDICATORS	
13 P :11		ļ	· · · · · · · · · · · · · · · · · · ·	0
1-2. Provide learning	ECOT complies with	ECOT complies with	ECOT complies with	State provided
objectives as a base for	Ohio model learning	Ohio model learning	Ohio model learning	learning objectives.
instruction in a	objectives. SEP	objectives. SEP	objectives. SEP	SEP and curriculum
computer-assisted	system is the starting	system is the starting	system is the starting	provided by our
medium.	point for the delivery	point for the delivery	point for the delivery	ECOT budget from
	of curriculum to	of curriculum to	of curriculum to	state funding,.
	students and can	students and can	students and can	Entitlement funds
	generate monthly	generate monthly	generate monthly	and grants
	reports. Indicator is	reports. Indicator is	reports. Indicator is	
	adequate student	improved student	high student	
	participation as	participation as	participation as	
	tracked by the SEP	tracked by the SEP	tracked by the SEP	
	program.	program.	program.	
3. Establish a	Survey students and	Take steps to	Begin	ECOT budget from
methodology to measure	parents to establish	improve on areas of	implementation of	state funding,
technology impact on	how technology	relative weakness	methodology for	entitlement funds
student learning and	based education	noted in prior year's	enriching content	and grants
assess evolving	compares with	survey. Re-survey at	delivery. This may	
instructional technology	traditional methods.	year-end. Investigate	include streaming	
capacities and needs	Work on improving	means for a richer	video requiring	
across the school in our	any areas of	delivery of content.	broadband access.	
ongoing intranet based	comparative	,		
curriculum.	weakness.			

## C. TECHNOLOGY

Our technology service and delivery section is our basic goal. We work on a daily basis to improve the methods of delivery and service to our students and teachers. It is a continuum of goals and efforts to complete those goals, since we are a technology-based school. Technology delivery, quality, and instruction through that medium are part of each person's daily goal and effort in this school.

- 1. Decrease the turnaround time from enrollment to deployment of computers and POTS lines or other types of improved modes of telecommunication.
- 2. Continue to improve the technology-based curriculum delivery by finding, reviewing, and utilizing new technologies, especially related to increased bandwidth, as they become available on the market.
- 3. Improve network functioning with providers and contractors to better serve the teachers and children.
- 4. See also Help Desk report, attached as Appendix B, which shows how many students, have been assisted with technology obstacles in the past month.

ANNUAL	VEAD 1	VEAD 2	VEAD 2	DIDCET
II.	YEAR 1	YEAR 2	YEAR 3	BUDGET
TECH.	BENCHMARKS	BENCHMARKS	BENCHMARKS	AND
GOALS	AND	AND	AND	ALLOCATIONS
1.5	INDICATORS	INDICATORS	INDICATORS	P00F1 1 . 6
1 Decrease	4-6 months for	2-4 months for	0-1 months for	ECOT budget from
turnaround time	installation.	installation.	installation.	state funding,
for computer	Indictors are login	Indicators are login	Indicators are login	entitlements and
and connectivity	and parent survey.	and parent survey.	and parent survey.	grant funds
2 Continue to	Establish	Investigate feasibility	Where available,	ECOT budget from
improve the	relationships with	and availability of	implement	state funding,
technology-	local telephony	broadband	broadband	entitlements and
based	providers across the	technologies.	technology on largest	grant funds and
curriculum	state and develop	Implement pilot	scale that is	donations.
delivery by	efficient means of	projects to compare	economically	
finding,	ordering POTS lines.	effectiveness of	feasible. Indicator is	
reviewing, and	Investigate feasibility	broadband	trimester review by	
utilizing new	and availability of	technology. Evaluate	Tech committee.	
technologies.	broadband	availability of		
	technologies.	widespread		
	Indicator is trimester	distribution for use in		
	review by Tech	year 3. Indicator is		
	committee.	trimester review by		
		Tech committee.		
3. Improve	Connectivity time of	Connectivity time of	Connectivity time of	ECOT budget from
network	delivery and source	delivery and source	delivery and source	state funding,
function	improved.	improved.	improved.	entitlements and
	Network continues to	Network continues to	Network continues to	grant funds and
	work without	work without	work without	donations.
	breakdown.	breakdown. Network	breakdown. Network	
	Quarterly review for	expands as necessary	expands as necessary	
	improvements.	due to enrollment.	due to enrollment.	
	Indicators are SEP	Quarterly review for	Quarterly review for	
	working 365 days per	improvements.	improvements.	
	year and student log	Indicators are SEP	Indicators are SEP	
	on.	working 365 days per	working 365 days per	
		year and student log	year and student log	
4 TT4'1' TT 1	) (	on.	Manthly navious of	ECOT budget from
4. Utilize Help	Monthly review of	Monthly review of	Monthly review of technical problems	
Desk to give	technical problems	technical problems	· •	state funding, entitlement funds and
technical	by staff and improve	by staff and improve	by staff and improve	
assistance.	procedures	procedures	procedures accordingly.	grants
	accordingly. Indicator is the	accordingly.  Indicator is the	Indicator is the	
	reduction, on the	reduction, on the	reduction, on the	
	report, of certain	reduction, on the report, of certain	report, of certain	
	types of assistance	types of assistance	types of assistance	
	requested at the Help	requested at the Help	requested at the Help	
	Desk.	Desk.	Desk.	

## III. STAFF

## A. Technologically Advanced Staff

- 1. ECOT is a state-of-the-art distance learning educational delivery system; the result of the combined efforts of leading international computer experts, and interface intelligence.
- 2. ECOT educational technology experts and teaching staff all have involvement in the development of curriculum and system of providing educational opportunity to our students.

## **B.** Staff Development

- 1. Current staff training
  - a. Staff training sessions on the ECOT system for each group of teachers that are hired. 3 days of intense training on our intranet system.
  - b. Staff training is on technical and educational subjects to enhance the delivery of educational goals are given on a one on one basis by our technical department. Staff receives training on our Student Electronic Profile system from Xerox, as needed to ensure this goal.
- 2. Interfacing technical and teaching staff to develop the best educational delivery system.
- 3. Teachers must know how to utilize technology services before they can be assigned students; development is ongoing on a case-by-case basis with our technology department, after the teacher is assigned students. Five percent of the ECOT technology department time is spent on teacher and student development of technology knowledge. The technology department determines the needs for staff development in technology capabilities and the teachers' supervisors determines the needs for educational development.
- 4. The Help Desk line gives support to the teachers and students with technology questions. Each month there is a report, which comes from Xerox who runs the Help Desk, concerning the results of the Help Desk line.
- 5. Incorporating SchoolNET programs, Element K and Novice/Practitioner Training, which provide technical training for teachers and students at regional sites, around Ohio, is slated for final review and implementation by September of 2001. The staff development will continue on individual basis from our administrative offices, on an as needed basis.
- 6. An orientation for staff, students, and parents is being prepared and our goal is to have it developed by July of 2001 with improvements and refinements throughout the next 5 years.

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#### IV. NEEDS

The following areas are currently in place and operational. As ECOT grows, the areas listed below will increase incrementally.

#### A. Telecommunications Services

- 1. Dedicated POTS lines or broadband service in the homes of the students and teachers.
- 2. Statewide Internet access provider.
- 3. Intranet network management.
- 4. ECOT administrative office network.

#### B. Hardware

- 1. T-3 lines to connect the Intranet to the Internet.
- 2. Servers to manage the Intranet and Internet use.
- 3. Servers to support Intranet applications (e-mail, SEP, Proxy, etc.)
- 4. Storage Area Network (SAN) for full ongoing backup of all servers.
- 5. Computers for the students, teachers and technical staff.

#### C. Software

- 1. Microsoft Operating Systems
- 2. Student Electronic Portfolio
- 3. Internet Explorer
- 4. Curriculum Software
- 5. Asset Management Software

## D. Timeline

- 1. The needs for the teachers and students for telecommunication, hardware and software are ordered at the day the teacher begins or the student is enrolled; the improvement of deployment is as scheduled in the technology table above in II. C. Timeline may appear excessive in early years. It should be noted, however, that many telephone companies operate solely on their own timeline.
- 2. Hardware needs to be added and or upgraded as the school grows and technology advances.
- 3. Software needs for curriculum are reviewed each year by committee. Improvements and new software and webware are added accordingly, such as those provided by ChildU or NovaNet.

4. SEP was developed just for ECOT since no comparable applications were on the market. The SEP needs to be reviewed to ensure that it continues to meet the needs of ECOT's students and teachers.

ANNUAL NEEDS	YEAR 1 BENCHMARKS AND	YEAR 2 BENCHMARKS AND	YEAR 3 BENCHMARKS AND	BUDGET AND ALLOCATIONS
	INDICATORS	INDICATORS	INDICATORS	ALLOCATIONS
1. Telecommunications POTS lines and ISP with improved deployment	4-6 months all students will have provided telecomm.	1-3 months all students will have provided telecomm.	0-1 months all students will have provided telecomm.	ECOT budget from state funding, entitlements and grant funds and donations.
2. Hardware: T-3 for school; servers for admin. Computers, scanners/fax/printer for student and teachers	Increase each year by June 30th due to needs created by new students	Increase each year by June 30th due to needs created by new students	Increase each year by June 30th due to needs created by new students	ECOT budget from state funding, entitlements and grant funds and donations.
3. Software: Electronic based curriculum and operating systems	Improve each year by June 30 <sup>th</sup> due to change in student population and newly available software.	Improve each year by June 30 <sup>th</sup> due to change in student population and newly available software.	Improve each year by June 30 <sup>th</sup> due to change in student population and newly available software.	ECOT budget from state funding, entitlements and grant funds and donations.
4. Student Electronic Portfolio (SEP)	Enhance functionality of SEP for student and teacher use. Improve monitoring and report generating capabilities. Committee needs to recommend changes in 1 <sup>st</sup> quarter of each calendar year for implementation the following summer.	Enhance functionality of SEP for student and teacher use. Improve monitoring and report generating capabilities. Committee needs to recommend changes in 1 <sup>st</sup> quarter of each calendar year for implementation the following summer.	Enhance functionality of SEP for student and teacher use. Improve monitoring and report generating capabilities. Committee needs to recommend changes in 1 <sup>st</sup> quarter of each calendar year for implementation the following summer.	ECOT budget from state funding, entitlements and grant funds and donations.

## IV. BUDGET:

## A. Budget

## 2000-2004 ECOT Technology Forecast

	2000-01		2001-02		2002-03		2003-2004	
Hardware	\$	1,027,749	\$	2,839,594	\$	4,027,941	\$	3,335,950
Software	\$	348,749	\$	1,272,570	\$	2,337,605	\$	3,478,842
Repairs & Upgrades		28,520	\$	717,663	\$	907,144	\$	1,360,716
Personnel	\$	3,874,987	\$	10,659,294	\$	16,992,168	\$	25,488,251
Telephony	\$	1,175,937	\$	2,238,481	\$	3,110,221	\$	4,559,219
Professional Development		24,023	\$	40,803	\$	44,911	\$	67,366
Technology Related Total Expenses:		6,479,965	\$	17,768,405	\$	27,419,989	\$	38,290,345
Total Expected Revenue:	\$	10,865,074	\$	34,511,241	\$	48,278,805	\$	67,751,262

## B. Budget Notes:

- 1. This is not a school district, but the budget enclosed is a three-year school budget. Hardware, software, personnel and telecommunication services are in the budget. Professional development is 5% of the technology department's work time; it is done on a one on one, case by case need.
- 2. Sources of Funding are State of Ohio foundation funds, federal and state grants, e-rate and entitlement funds.
- 3. The budget is accurate for 2000-2001 year, but is a forecast for the following years due to the fact that the amount of funding that will come through grants cannot be determined in advance.
- 4. Priorities are in descending order are hardware, telecommunications, personnel, software, professional development and upgrades.
- 5. The Budget shown above only includes technology related line items. A more detailed summary is attached as Appendix C.

## V. EVALUATION

- 1. General Accounting Methods Used and Recorded
- 2. ADM Reports to Ohio Department of Education
- 3. Surveys
  - a. Student/Parent surveys—on an as needed basis
  - b. Income surveys—for determining eligibility for NSLP
- 4. Tests of Students—proficiency tests are given as required and utilized by those grade levels
- 5. Teacher records of Student Evaluations

## VI. TIMELINES: PLANNING AND MANAGEMENT

- A. Upon admission, each student is given a computer and a dedicated POTS line or other telecommunication method to reach our ISP, in order to get to our intranet.
- B. Increases in technology are on an "as available" and "as affordable" basis. For example: As DSL lines become more affordable and contracts may be made to stay within our budget, we will begin to deploy these lines. We are in on-going negotiations with telephone companies to provide improved service for our students and teachers.
- C. Reporting on progress occurs during weekly staff meetings with our Director of Technology, Superintendent, Director of Administration and Our Chief of Staff. We are on a continuous evaluation status, as our new technology evolves and the use of it to teach via intranet. It is a rapidly improving program, which encounters new technology obstacles at each turn. (The minutes of our last meeting are enclosed as an example.)
- D. Reporting from the teachers to the Director of Technology happens on a daily basis and our electronic media permits input from each teacher, student and family on a daily basis.
- E. We have a call center where issues are discussed when electronic reporting of the issue is inappropriate. These problems are then distributed to the corresponding departments for solving.